

## **REMARKS**

### **A. Background**

The present amendment is filed in response to the Examiner's Office Action mailed December 3, 2003. Claims 1-25, and 27-46 were pending. Claims 13 and 46 are cancelled. Claims 1-12, 14-25, 27, 28, and 40-45 are amended. Claims 1-12, 14-25, and 27-45 are now pending in view of the above amendments.

Reconsideration is respectfully requested in view of the above amendments and following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

### **B. Comment on Previous Election by Applicant**

Applicant acknowledges the decision by the Examiner to examine claims 1-25 and 27-46 of the application and wishes to thank the Examiner for this decision.

### **C. Objections to the Drawings**

The Examiner objects to the drawings for various informalities. In particular, the Examiner refers to "Notice of Draftperson's Patent Drawing Review," attached to the Office Action, which objects to drawings associated with Figures 4 and 6 that are not separately labeled. In response, Applicant has amended these figures to include Figures 4A and 4B in addition to Figure 4, and Figure 6A in addition to Figure 6. For the Examiner's convenience, a marked-up copy of the originally submitted figures, showing the changes made in red ink, is also submitted herewith. Applicant submits that no new matter has been introduced as a result of these amendments. Entry of the amended figures and removal of the objection is therefore respectfully requested.

**D. Rejections Under 35 U.S.C. § 112**

The Examiner rejects claims 1 and 40 under 35 U.S.C. § 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner objects to the use of the limitation “an x-ray tube component disposed on the shaft” as being indefinite. In response, Applicant has amended claims 1 and 40 to remove the language at issue.

The Examiner also rejects claims 2, 4, and 28 for including the term “substantially,” and alleges that this term renders each of the above claims indefinite. In response, Applicant has amended claims 2, 4, and 28 to remove the term “substantially.” Removal of the rejection under Section 112 of these claims, as well as claims 1 and 40, is therefore respectfully solicited.

**E. Objection to the Specification**

The Examiner objects to the specification on the grounds that the title of the invention is not descriptive. In response, Applicant has amended the title of the present application to more clearly describe the subject matter of the invention. In light of this modification, removal of the objection to the specification is therefore respectfully requested.

**F. Objections to the Claims**

The Examiner objects to several claims in the present application for various informalities. In particular, the Examiner objects to claims 2-13, 15-25, and 41-46 for not including the phrase “for use in an x-ray tube” after the word “system” in each of these claims. In response, Applicant has included the above phrase in each claim as requested.

The Examiner objects to claim 14 for including the letter “a” before the article “an” in line 5. In response, Applicant has made the appropriate correction.

The Examiner also objects to claims 29, 35, and 36 for various word misspellings created by non-conforming margin settings. In response, Applicant has reformatted these claims such that no perceived misspellings are present. In light of the corrections and modifications made as described above, removal of the objections to each of the above claims is therefore respectfully requested.

**G. Rejections Under 35 U.S.C. § 102**

The Examiner rejects claims 1-6, 8-20, 22-25, and 27-46, under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,795,832 to *Holland*. As will be shown below, however, *Holland* – assuming *arguendo* that it qualifies as a reference under Section 102 – fails to teach each and every element of the pending claims, and thus does not anticipate the present claimed invention.

*Holland* discloses a target for use in x-ray tubes. In particular, *Holland* teaches, as seen in Figure 1, an x-ray target 26 including a focal track, or disc, 36 located between a first backing ring 38 and a second backing ring, or dome, 42. These three components cooperate to form the target, which rotatably mounts against a collar 40 on a rotor shaft 28. As shown in Figure 1, and as described in column 4, lines 25-55, the disc 36 is retained in place by intimate physical contact created by sandwiching the disc between the dome 42 and the ring 38. These components are secured against the collar 40 by a nut 44 that is threaded on the end of the rotor shaft 28.

The claimed invention is substantially different than the device taught by *Holland*. Specifically, amended independent claim 1 requires the presence of an integrated component mounting system for use in an x-ray tube, including a shaft having a longitudinal axis, a target anode disposed on the shaft, and “*means for exerting and transmitting a radial force to said*

*target anode.*” *Holland* teaches no such structure. In contrast, *Holland* simply discloses various components that are assembled to form an x-ray tube target. As the target assembly is secured on the rotor shaft against the collar by the nut, it naturally follows that this prevents movement of the disc of the target in a radial direction. However, nowhere does *Holland* disclose or suggest that its assembly in any way provides means for exerting or transmitting a radial force to the target anode. Indeed, the target assembly of *Holland* includes the disc, dome, and ring discussed above. The disc, dome, and ring are merely target sub-components, and only together do they comprise the target 26 of *Holland* (see *Holland*, col. 2, lines 4-9). Thus, it follows that these components are unable to provide radial forces to themselves.

Further, Figure 1 illustrates that the force exerted by the nut against the dome in the assembly taught by *Holland* is directed in only an axial direction along a longitudinal axis defined by the rotor shaft. Neither the disc, dome, nor ring of *Holland* include structure or means for exerting force to a target anode in the radial direction. As such, *Holland* fails to teach or suggest at least this requirement of amended independent claim 1. Thus, *Holland* fails to anticipate claim 1. In light of this, Applicant submits that claim 1 is allowable and respectfully requests that the claim under Section 102 be removed. Moreover, inasmuch as claims 2-12 are dependent upon independent claim 1, Applicant submits that these claims are also allowable for at least the reasons given above. Allowance of these claims is therefore also respectfully requested.

Amended independent claim 14 is patentably distinct for at least the reasons set forth above. In particular, claim 14 requires an x-ray tube having a shaft defining a longitudinal axis, a nut configured to engage the shaft, an x-ray tube target anode that defines a first shaped surface, and “a second shaped surface defined either by said shaft or by said nut and arranged for contact with first said shaped surface *such that a radial force is applied to said target anode*

*component with respect to the longitudinal axis defined by said shaft.”* As has been discussed above, this limitation is not found in *Holland*. Thus, claim 14, as well as claims 15-25 that depend therefrom, are also allowable. Removal of the rejection under Section 102 and allowance of these claims is therefore respectfully requested.

Amended independent claims 27 and 40 are also patentably distinct for at least the reasons set forth above. In particular, claim 27 discloses an x-ray tube having a shaft defining a longitudinal axis, a target anode disposed on the shaft, and “*means for exerting and transmitting a radial force to said target anode.*” Similarly, claim 40 requires a component mounting system having a shaft defining a longitudinal axis, a nut configured to engage the shaft, an interface structure that defines a first shaped surface, a target anode that receives the interface structure, and “*a second shaped surface defined either by said shaft or by said nut and arranged for contact with said first shaped surface such that a radial force is applied to said target anode with respect to the longitudinal axis defined by said shaft.*” Again, the limitations enumerated in claims 27 and 40 are neither taught nor suggested by *Holland*. Thus, claims 27 and 40, as well as the claims depending therefrom, are allowable. Removal of the rejection under Section 102 and allowance of these claims is therefore respectfully solicited.

#### **H. Rejections Under 35 U.S.C. § 103**

The Examiner rejects claims 7 and 21 under 35 U.S.C. § 103(a) as being unpatentable over *Holland*. Applicant notes that each of these rejections is based on the *Holland* reference. Applicant further notes that each of the rejected claims here is dependent upon either amended independent claim 1 or 14. As was previously discussed, the teachings of *Holland* are inapplicable to the present invention as applied to claims 1 and 14 for failing to teach or suggest each of the limitations contained in those claims. Thus, *Holland* is equally inapplicable to the

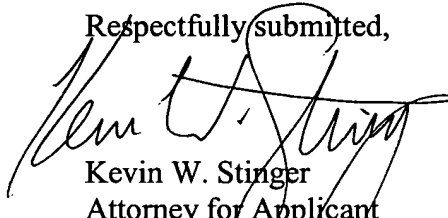
present claims rejected under Section 103 for at least the above reasons, that is, its failure to teach or suggest all of the claim limitations contained not only in independent claims 1 or 14, but also the limitations contained in the presently rejected dependent claims 7 and 21. Thus, the Office Action has failed to establish a *prima facie* case of obviousness. Applicant therefore respectfully submits that claims 7 and 21 are allowable and that the above rejection under Section 103 should be withdrawn.

### **CONCLUSION**

In view of the discussion and amendments submitted herein, Applicant respectfully submits that each of the pending claims 1-12, 14-25, and 27-45 is now in condition for allowance and that all objections to the application have been resolved. Therefore, reconsideration of the rejections and objections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that can be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 3rd day of May, 2004.

Respectfully submitted,



Kevin W. Stinger  
Attorney for Applicant  
Registration No. 48,959  
Customer No. 022913

KWS/lrc  
LC0000001105V001